

Exhibit 2

10 20 30 40 50  
ACAAA CAGGA AGGAC AGCAG GCTCT GGCAG CCAGA AGCCT GTGGC CCCAA  
TGTTC GTCCT TCCTG TCGTC CGAGA CCGTC GGTCT TCGGA CACCG GGGTT

60 70 80 90 100 \*

GCTGG CAGGA TGGCC CCCTT CCTGC AGGTC CCCCCA CAGCC TTCTG GGTTC  
CGACC GTCCT ACCGG GGGAA GGACG TCCAG GGGGT GTCGG AAGAC CCAAG

110 120 130 140 150  
CTGAC ACGAG AGAAC AGGTG GGGCG GGGTG AAGTG AACTC TGAAG CCAAA  
GACTG TGCTC TCTTC TCCAC CCCGC CCCAC TTCAC TTGAG ACTTC GGTTC

160 170 180 190 200 \*

ATGTG ACTCT CCTGG GGTCA CCAGC TTGGG GAGAG GTGAA GAAAG ATGCC  
TACAC TGAGA GGACC CCAGT GGTGG AACCC CTCTC CACTT CTTTC TACGG

210 220 230 240 250  
GGGGC GGAAA CAAAG GGGCA GATAT CACTA TGGTT ATCTT ACTAA GCACA  
CCCCG CCTTT GTTTC CCCGT CTATA GTGAT ACCAA TAGAA TGATT CGTGT

1088  
260 270 280 290 300 \*

GAGTA ACTGA AAAAG CAAGG GTACC GCTGC CCACC TCGTG CCCAC CTTAC  
CTCAT TGACT TTTTC GTTCC CATGG CGACG GGTGG AGCAC GGGTG GAATG

310 320 330 340 350  
GTTAT ACCTC AAACC AGCTA GATAG TTTCT GATGG CACCC ATACC CTCCC  
CAATA TGGAG TTTGG TCGAT CTATC AAAGA CTACC GTGGG TATGG GAGGG

360 370 380 390 400 \*

1042  
TTCCC CTTTA GGCAT TGCAG AAGCT CTCCA CCACA ATCTG GAACT TATAC  
AAGGG GAAAT CCGTA ACGCG TTCGA GAGGT GGTGT TAGAC CTTCA ATATG

410 420 430 440 450  
CCTGC GAGGG GATGG GCAGG GCACT TCTGA GGTGC CAATC AGCCT GCACT  
GGACG CTCCC CTACC CGTCC CGTGA AGACT CCACG GTTAG TCGGA CGTGA

460 470 480 490 500  
CGCCT CTGCC CTGGC CATGG CACTG CTGTC AGTTT CTTGG TACCT GTCTC  
GCGGA GACGG GACCG GTACC GTGAC GACAG TCAAA GAACC ATGGA CAGAG

499.1 510 520 530 540 550  
AACAG CAGCC TTGTC ACGTG AGACT ATGGC TGGCG GTGGG GGTGG GGGCA  
TTGTC GTCGG AACAG TGCAC TCTGA TACCG ACCGC CACCC CCACC CCCGT

560 570 580 590 600 \*

988  
GGAAT CCTAG AAGCA CAGGA GTGAC ATAGG GTCGG GTCGG GCAGA CCGAA  
CCTTA GGATC TTCGT GTCCT CACTG TATCC CAGCC CAGCC CGTCT CGCTT

672 610 620 630 640 650  
GTGTA GGAGG TGATC QCCAA AGGGG TGCTG GGGAC GATCT GGCCA ACACT  
CACAT CCTCC ACTAG GGGTT TCCCT ACGAC CCCTG CTAGA CCGGT TGTGA

660 670 680 690 700 \*

GTCCT CCCAT TCAAA ACTGC CAGTC TGGAG CTCTG GGACA TGGAC AAGCC  
CAGGA GGGTA AGTTT TGAGG GTCAG ACCTC GAGAC CCTGT ACCTG TTCGG

C.DNA

710 720 730 740 750  
 AGGCC TGCTA TTCTC CATAc AGGGC TCCAT AGTGT CTGGC TCAGC AGAGT  
 TCCGG ACGAT AAGAG GTATG TCCCG AGGTA TCA GACCG AGTCG TCTCA  
 760 770 780 790 800  
 GGGGG ATCTG GTGGG GATGG AGGAA GCTTA GCTAA AAGCT TTGTA TAGGC  
CCCCC TAGAC CACCC CTACC TCCTT CGAAT CGATT TTCGA AACAT ATCCG  
 810 820 830 840 850  
 TGAAG CTCTG AGTGA CCCTG CTGGG CCACC CTACC CTGGT CTGGG CTGGG  
 ACTTC GAGAC TCACT GGGAC GACCC GGTGG GATGG GACCA GACCC GACCC  
 860 870 880 890 900  
TCATT GCATC CCCAG ATTGG AAGGC TTGGT GAGAT GGAGA GGAAC CTTGG  
 AGTAA CGTAG GGGTC TAACC TTCCG AACCA CTCTA CCTCT CCTTG GAACC  
 910 920 930 940 950  
CTACA AGCTA TAGCT TTGCC CACCA GAGCC TGCTG GAGGG GAATC AAACA  
GATGT TCGAT ATCGA AACGG GTGGT CTCGG ACGAC CTCCC CTTAG TTTGT  
 960 970 980 990 1000  
39175 START  
AGCCT GGACC TGAGG CTGGG ACTAG CTTTC CTGTT TCTGG AGTGG ATGCC  
 TCGGA CCTGG ACTCC GACCC TGATC GAAAG GACAA AGACC TCACC TACGG  
 1010 1020 1030 1040 1050  
 AACCC CCTGC CCACC AGCCT GCCTG TCCAC GCCAG GGACA CACAG ACTCC  
 TTGGG GGACG GGTGG TCGGA CGGAC AGGTG CGGTC CCTGT GTGTC TGAGG  
 1060 1070 1080 1090 1100  
946  
TTCCC TTTCC AGACT GGAAA GCCCC CTCCT GGGAG AGCAG GAAGG AAGCA  
AAGGG AAAGG TCTGA CCTTT CGGGG GAGGA CCCTC TCGTC CTTCC TTCGT  
 1110 1120 1130 1140 1150  
 ACCTG CAACT CTTCC AGCCC TGGAC CTTGG GCTGA ACCTA CAGTT CAAGG  
 TGGAC GTTGAGA GAAGG TCGGG ACCTG GAACC CGACT TGGAT GTCAA GTTCC  
 1160 1170 1180 1190 1200  
 TTTGT ATGCT CACAG GTCTT GGCAG GGAAA GATAA GAATC CCCAG GGCAC  
 AAACA TACGA GTGTC CAGAA CCGTC CCTTT CTATT CTTAG GGGTC CCGTG  
 1210 1220 1230 1240 1250  
 CCTCC CCCCC GCCCC CCAGT CCACT GCAGG TAGCT CCTGG GTCTG CCCTT  
 GGAGG GGGGG CGGGG GGTCA GGTGA CGTCC ATCGA GGACC CAGAC GGGAA  
 1260 1270 1280 1290 1300  
 CAGGG CAAGT GCTGA CGCTC CATCA GACTG TGATG GGGCC CTTTT CTGAG  
 GTCCC GTTCA CGACT GCGAG GTAGT CTGAC ACTAC CCCGG GAAAA GACTC  
 1310 1320 1330 1340 1350  
 GATGA CAATT CTGAG AACAA GGCAT TTTTC TAGAG GTGGC AGAAC AGCAT  
 CTACT GTTAA GACTC TTGTT CCGTA AAAAG ATCTC CACCG TCTTG TCGTA  
 1360 1370 1380 1390 1400  
 TTTGT GATGC CCGAG GATCT GGGAG CACAG GTCCA GCTTA ATGAG GGATT  
 AAACA CTACG GGCTC CTAGA CCCTC GTGTC CAGGT CGAAT TACTC CCTAA  
 911

1410 1420 1430 1440 1450  
 GGAGG AAGTG GGTAT CATCA TTACA GGGAG GGGCC TCTGT GGCCT CCTGG  
 CCTCC TTCAC CCATA GTAGT AATGT CCCTC CCCGG AGACA CCGGA GGACC  
  
 1460 1470 1480 1490 1500  
 \*  
 GAAAAA TGCAG TTGCT CTCTT TGGGT GGCCT GGGGT TGTGT GGTGG GCAGA  
 CTTTT ACGTC AACGA GAGAA ACCCA CCGGA CCCCA ACACA CCACC CGTCT  
  
 1510 1520 1530 1540 1550  
 GGACG GAGGT GCTCA TTGGG GGAG GGATC ACTTC TGCTC AGAGT GCTCG  
 CCTGC CTCCA CGAGT AACCC CCTTC CCTAG TGAAG ACGAG TCTCA CGAGC  
  
 1560 1570 1580 1590 1600  
 \*  
 CAAGG GCCTT TCCTT TTCCT GAAGG CAAGC AGGCC TCCTC CTCCT CCTCT  
 GTTCC CGGAA AAGAA AAGGA CTTCC GTTCG TCCGG AGGAG GAGGA GGAGA  
 1610 1620 1630 1640 1650  
TCCTC CTTCT CCTCT TCCTC CTCTT TCTCC ATATG CTAG CTGGT CATT  
 AGGAG GAAGA GGAGA AGGAG GAGAA AGAGG TATAC GGATC GACCA GTAAA  
  
 1660 1670 1680 1690 1700  
 \*  
CTAGG GACCA GCATG GTTGG GAAGG GGGCC TTGTC TTGGC CTTCC TCTTG  
 GATCC CTGGT CGTAC CAACC CTTCC CCCGG AACAG AACCG GAAGG AGAAC  
  
 1710 1720 1730 1740 1750  
TCTCA ATTCC CTCTT TGAGC AGAAG ACGGG GTGGG TGGGG TAGGA TTGGA  
 AGAGT TAAGG GAGAA ACTCG TCTTC TGCCC CACCC ACCCC ATCCT AACCT  
  
 1760 1770 1780 1790 1800  
 \*  
TAGTG GTTGA TGCCA AAGAT TGAAG GGGTA GGGCG GGGCA GAAGT GGGAA  
ATCAC CAACT ACGGT TTCTA ACTTC CCCAT CCCGC CCCGT CTTCA CCCTT  
 1810 1820 1830 1840 1850  
GGTCC CTGGC TTCTC CACCT TGGTA GATGG TGAGG AGCCC CAGAG GTTGA  
 CCAGG GACCG AAGGA GTGGA ACCAT CTACC ACTCC TCGGG GTCTC CAACT  
  
 1860 1870 1880 1890 1900  
 \*  
GCTGA GCAGC AGCTG TGATT TCAGG GTGCC TCTGT TGGAG AGGCT GCTGT  
 CGACT CGTCG TCGAC ACTAA AGTCC CACGG AGACA ACCTC TCCGA CGACA  
  
 1910 1920 1930 1940 1950  
GATTT GAAAA TCTTC TTCTC TTGGT GACAA TTCCA GAAGG CTCCA GATGA  
 CTAAA CTTTT AGAAG AAAGG AACCA CTGTT AAGGT GFTCC GAGGT CTACT  
 1960 1970 1980 1990 2000  
 \*  
ATTGT ATTGG TGAGT GCCTG GCCCT TAAGC AGTCC CAGCT GGGGA TGATG  
TAACA TAACC ACTCA CGGAC CGGGAA ATTG TGAGG GTCGA CCCCT ACTAC  
 2010 2020 2030 2040 2050  
GGGAT TTATG GGTGT CCCTG AGCCT AGGGT GACAG GGCCT CTCCT TTTTT  
 CCCTA AATAC CCACA GGGAC TCGGA TCCCA CTGTC CCGGA GAGGA AAAAA  
  
 2060 2070 2080 2090 2100  
 \*  
B902 7 2080 2090 2100  
TCTTA TTCTG CTTCA GGGTA CCACC CCACC AGGAG GCTGC GGGCC TGGGG  
 AAAAT AAGAC GAAGT CCAT GGTGG GGTGG TCCCTC CGACG CCCGG ACCCC

alt A1  
Purine R?

10/26 2110 2120 2130 2140 2150  
CGGCC TAGCT GGAGG AGCAA CATTC ATGTT AAATT GTTTT TTCTG GCTGT  
GCCGG ATCGA CCTCC TCGTT GTAAG TACCA TTAAA CCAAA AAGAC CGACA

2160 2170 2180 2190 2200 \*

GGGGA TCAGC TCCTG GAAGT GCCCC TGTGC CTCAG TCCAC ACTCA CCATC  
CCCCT AGTCG AGGAC CTTCA CGGGG ACACG GAGTC AGGTG TGAGT GGTAG  
8847

2210 8845 2220 2230 2240 2250  
CTTAT CTGGC ACTGG CCTTT CACCA ACCGG CCGCC AGAGC TACCT GGTGA  
GAATA GACCG TGACC GGAAA GTGGT TGGCC GGCGG TCTCG ATGGA CCACT

2260 2270 2280 2290 2300 \*

M5 CACCT GCACT CGCTA TGGCA TGGCC AGCTG CCGTC TGAGT GCTAA CCGGA  
GTGGA CGTGA GCGAT ACCGT ACCGG TCGAC GGCAG ACTCA CGATT GGCCT  
8847

2310 2320 2330 4205B 2340 2350  
GCCTG CTAGC CAGTG CTGAT GCTGT GGTCT TCCAC CACCG TGAGC TGCAA  
EGGAC GATCG GTCAC GACTA CGACA CCAGA AGGTG GTGGC ACTCG ACGTT

2360 2370 2380 2390 2400 \*

ACCCG GCAAT CTCTC CTACC CCTGG ACCAG AGGCC ACACG GACAG CCTTG  
TGGGC CGTTA GAGAG GATGG GGACC TGGTC TCCGG TGTGC CTGTC GGAAC

8851 2410 2420 2430 2440 2450  
GGTCT GGGCC TCCAT GGAAT CGCCC AGTAA TACCC ATGGT CTCCA TCGCT  
CCAGA CCCGG AGGTA CCTTA GCGGG TCATT ATGGG TACCA GAGGT AGCGA  
8850

2460 2470 2480 2490 2500 \*

TCCGG GGCAT CTTCA ACTGG GTGCT GAGCT ATCGG CGTGA TTCAG ATATC  
GGGCC CCGTA GAAGT TGACC CACGA CTCGA TAGCC GCACT AAGTC TATAG

2510 2520 2530 2540 8771 2550  
TTTGT ACCCT ACGGT CGCTT GGAGC CTCTC TCTGG GCCCA CATCC CCACT  
AAACA TGGGA TGCCA GCGAA CCTCG GAGAG AGACC CGGGT GTAGG GGTGA

2560 2570 2580 2590 2600 \*

ACCGG CCAAA AGCAG GATGG CTGCC TGGGT GATCA GCAAT TTCCA GGAGC  
TGGCC GGTTC TCGTC CTACC GACGG ACCCA CTAGT CGTTA AAGGT CCTCG  
8771

2610 2620 2630 2640 2650  
GGCAG CAGCG TGCAA AGCTG TACCG GCAGC TGGCC CCTCA TCTGC AGGTG  
CCGTC GTCGC AGGTT TCGAC ATGGC CGTCG ACCGG GGAGT AGACG TCCAC

2660 2670 2680 2690 2700 \*

GATGT GTTCG GTCGC GCCAG CGGAC GGCCC CTATG CGCTA ATTGT CTGCT  
CTACA CAAGC CAGCG CGGTC GCCTG CGGGG GATAC GCGAT TAACA GACGA

2710 2720 2730 2740 2750  
GCCCA CTTTG GCCCC GTACC GCTTC TACCT GGCCT TTGAG AACTC ACAGC  
CGGGT GAAAC CGGGC CATGG CGAAG ATGGA CCGGA AACTC TTGAG TGTG

2760 2770 2780 2790 2800 \*

ATCGG GACTA CATCA CTGAG AAGTT CTGGC GCAAT GCCCT GGCAG CTGGT  
TAGCC CTGAT GTAGT GACTC TTCAA GACCG CGTTA CGGGG CGCCG GACCA  
8715

2810        2820        2830        2840        2850  
 GCTGT ACCCG TGGCG CTGGG ACCTC CTCGG GCCAC CTACG AGGCT TTTGT  
 CGACA TGGGC ACCGC GACCC TGGAG GAGCC CGGTG GATGC TCCGA AAACA

2860        2870        2880        2890        2900 \*  
 GCCAC CAGAT GCCTT TGTAC ACGTG GACGA CTTCA GCTCT GCCCG TGAAAC  
 CGGTG GTCTA CGGAA ACATG TGCAC CTGCT GAAGT CGAGA CGGGC ACTTG

BB48 2910        2920        2930        2940        2950  
TGGCT GTCTT CCTCG TCAGC ATGAA TGAGA GTCGT TATCG TGGCT TCTTT  
ACCGA CAGAA GGAGC AGTCG TACTT ACTCT CAGCA ATAGC AACGA AGAAA

2960        2970        2980        2990        3000  
8868        Eco 97III  
 GCTTG GCGAG ACCGG CTCCG TGTGC GGCTC CTGGG TGACT GGAGG GAGCG  
 CGAAC CGCTC TGGCC GAGGC ACAGC CCGAG GACCC ACTGA CCTCC CTCGC

3010        3020        3030        3040        3050  
CTTCT GCACC ATCTG TGCCC GCTAC CCTTA CTTGC CCCGC AGCCA GGTCT  
GAAGA CGTGG TAGAC ACGGG CGATG GGAAT GAACG GGGCG TCGGT CCAGA

3060        3070        3080        3090        3100 \*  
8876        STOP  
 ATGAA GACCT TGAAA GCTGG TTCCA GGCTT GAACG CCTGC TGCTG GGAGA  
 TACTT CTGGA ACTTT CGACC AAGGT CCGAA CTTGA GGACG ACGAC CCTCT

3110        3120        3130        3140        3150  
 GGCTG GATGG GTGGG AGACT GATGT TGAAA CCAAA GAGCT GGGCA TCCAG  
 CCGAC CTACC CACCC TCTGA CTACA ACTTT GGTTT CTGGA CCCGT AGGTC

3160        3170        3180        3190        3200 \*  
GCTTT TGGTC ACCAT GGCAC TACCC CAAGG CTTTT CCTGT TCAGT GACCA  
CGAAA ACCAG TGGTA CCGTG ATGGG GTTCC GAAAA GGACA AGTCA CTCGT

8877  
8905 3210        3220        3230        3240        3250  
GAAT TCAGG ATATA AGGAG AAGAC TGGGC TGAGA TACCC TGGTG GGCTT  
CCTTA AGTCC TATAT TCCTC TTCTG ACCCG ACTCT ATGGG ACCAC CCGAA

Eco 97I  
 3260        3270        3280        3290        3300 \*  
 TAGAG TAGGG GCCCA GGATA AGAGA CAATG AATTA ATGAG GAGCA TATGG  
 ATCTC ATCCC CGGGT CCTAT TCTCT GTTAC TTAAT TACTC CTCGT ATACC

3310        3320        3330        3340        3350  
 GGAAG GTGGC TGAGG GTCCC TGACT TACCT TGACG CATGG CTGAA GGCTC  
 CCTTC CACCG ACTCC CAGGG ACTGA ATGGA ACTGG GTACC GACTT CCGAG

3360        3370        3380        3390        3400 \*  
 CATGC CCATG GCTGG AGCTG GGACC CTACA CTTCT ATAGT CAAGG TGCTT  
 GTACG GGTAC CGACC TCGAC CCTGG GATGT GAAGA TATCA GTTCC ACGAA

3410        8954 3420        3430        3440        3450  
AGCCT CAAGG TTGCA GATGC ACCCT CTAGT ACTCT GGGTG CAGAC TGTAC  
TCGGA GTTCC AACGT CTACG TGGGA GATCA TGAGA CCCAC GTCTG ACATG

3460        3470        3480        3490        3500 \*  
 ACTGG GCGCA GGGGG TTGTG GAAGG ACAGT GCAGA TGATT CTGGG CTTTT  
 TGACC CGCGT CCCCC AACAC CTTCC TGTCA CGTCT ACTAA GACCC GAAAA

3510        3520        3530        3540        3550  
GACAC CACAG TTCCC CCAGG GAAAG AGGCA CTACT AATAA AAACA CTGAC  
CTGTG GTGTC AAGGG GGTCC CTTTC TCCGT GATGA TTATT TTTGT GACTG

3560        3570        3580        3590  
AGAAA TCTCC TGGTC AAGTC TGTGA GGCAG CAGAG CTCGA ATTC  
TCTTT AGAGG ACCAG TTCAG ACAAT CCGTC GTCTC GAGCT TAAG

←  
and  
cDNA